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(FILE 'HOME' ENTERED AT 17:54:47 ON 21 FEB 2006)

FILE 'HCAPLUS' ENTERED AT 18:15:16 ON 21 FEB 2006

E ARAI TOMONORI/AU

L17 10 SEA ABB=ON "ARAI TOMONORI"/AU

L18 3 SEA ABB=ON L17 AND ?ISOPROPENYL?
SELECT RN L18 1-3

FILE 'REGISTRY' ENTERED AT 18:16:24 ON 21 FEB 2006

L19 14 SEA ABB=ON (675605-81-9/BI OR 108788-33-6/BI OR 149-73-5/BI
OR 1617-31-8/BI OR 28465-09-0/BI OR 28465-10-3/BI OR 39863-91-7
/BI OR 675605-82-0/BI OR 675605-83-1/BI OR 675605-84-2/BI OR
690242-72-9/BI OR 74036-20-7/BI OR 763-32-6/BI OR 7785-70-8/BI)

FILE 'HCAPLUS' ENTERED AT 18:16:29 ON 21 FEB 2006

L20 3 SEA ABB=ON L18 AND L19

FILE 'REGISTRY' ENTERED AT 18:18:16 ON 21 FEB 2006

L21 1 SEA ABB=ON 675605-81-9/RN

FILE 'HCAPLUS' ENTERED AT 18:18:31 ON 21 FEB 2006

L22 2 SEA ABB=ON L21 *2 cit's from CAPLUS*

FILE 'MEDLINE, BIOSIS, EMBASE, JAPIO, JICST-EPLUS' ENTERED AT 18:18:43 ON
21 FEB 2006

L23 0 SEA ABB=ON L22 *0 cit's from databases*

FILE 'USPATFULL' ENTERED AT 18:18:54 ON 21 FEB 2006

L24 0 SEA ABB=ON L21 *0 cit's from USPatfull*

FILE HOME

FILE HCAPLUS

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FILE COVERS 1907 - 21 Feb 2006 VOL 144 ISS 9

FILE LAST UPDATED: 20 Feb 2006 (20060220/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE REGISTRY

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 20 FEB 2006 HIGHEST RN 874742-76-4

DICTIONARY FILE UPDATES: 20 FEB 2006 HIGHEST RN 874742-76-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Structure search iteration limits have been increased. See HELP SLIMITS
for details.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

FILE MEDLINE

FILE LAST UPDATED: 21 FEB 2006 (20060221/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 will soon be available. For details
on the 2005 reload, enter HELP RLOAD at an arrow prompt (=>).
See also:

<http://www.nlm.nih.gov/mesh/>
http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html
http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the
MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate

FILE BIOSIS

FILE COVERS 1969 TO DATE.

CAS REGISTRY NUMBERS AND CHEMICAL NAMES (CNs) PRESENT
FROM JANUARY 1969 TO DATE.

RECORDS LAST ADDED: 15 February 2006 (20060215/ED)

FILE EMBASE

FILE COVERS 1974 TO 20 Feb 2006 (20060220/ED)

EMBASE has been reloaded. Enter HELP RLOAD for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

FILE JAPIO
FILE COVERS APR 1973 TO OCTOBER 27, 2005

>>> GRAPHIC IMAGES AVAILABLE <<<

>>> NEW IPC8 DATA AND FUNCTIONALITY NOT YET AVAILABLE IN THIS FILE.
USE IPC7 FORMAT FOR SEARCHING THE IPC. WATCH THIS SPACE FOR FURTHER
DEVELOPMENTS AND SEE OUR NEWS SECTION FOR FURTHER INFORMATION
ABOUT THE IPC REFORM <<<

FILE JICST-EPLUS
FILE COVERS 1985 TO 20 FEB 2006 (20060220/ED)

THE JICST-EPLUS FILE HAS BEEN RELOADED TO REFLECT THE 1999 CONTROLLED
TERM (/CT) THESAURUS RELOAD.

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 21 Feb 2006 (20060221/PD)
FILE LAST UPDATED: 21 Feb 2006 (20060221/ED)
HIGHEST GRANTED PATENT NUMBER: US7003800
HIGHEST APPLICATION PUBLICATION NUMBER: US2006037120
CA INDEXING IS CURRENT THROUGH 21 Feb 2006 (20060221/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 21 Feb 2006 (20060221/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2005
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2005

=> d que stat 122

L21 1 SEA FILE=REGISTRY ABB=ON 675605-81-9/RN
L22 2 SEA FILE=HCAPLUS 'ABB=ON L21

=> d ibib abs hitstr 122 1-2

L22 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:38941 HCAPLUS

DOCUMENT NUMBER: 140:287191

TITLE: Synthesis of the sex pheromone of the citrus mealybug, *Pseudococcus cryptus*

AUTHOR(S): Nakahata, Takashi; Itagaki, Noriaki; Arai, Tomonori; Sugie, Hajime; Kuwahara, Shigefumi

CORPORATE SOURCE: Laboratory of Applied Bioorganic Chemistry, Division of Life Science, Graduate School of Agricultural Science, Tohoku University, Sendai, 981-8555, Japan

SOURCE: Bioscience, Biotechnology, and Biochemistry (2003), 67(12), 2627-2631

CODEN: BBBIEJ; ISSN: 0916-8451

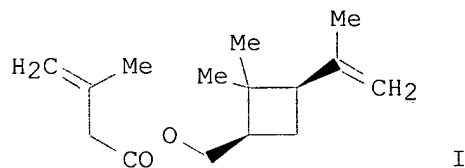
PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:287191

GI



AB The sex pheromone of the citrus mealybug (*Pseudococcus cryptus*), [(1R,3R)-3-isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-buten-1-yl ester (I), was synthesized from (+)- α -pinene in five operational steps in a 43% overall yield. The synthetic pheromone was identical with the natural pheromone in ¹H-NMR and mass spectroscopic properties, and showed almost the same pheromonal activity as the natural pheromone.

IT **675605-81-9P**, (1R,3R)-3-Isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-buten-1-yl ester

RL: BSU (Biological study, unclassified); SPN (Synthetic preparation);

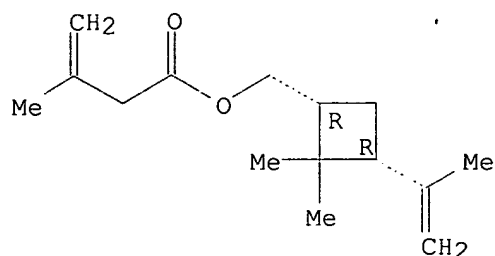
BIOL (Biological study); PREP (Preparation)

(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, *Pseudococcus cryptus*)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L22 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:833082 HCAPLUS

DOCUMENT NUMBER: 141:36321

TITLE: Identification of a sex pheromone component of *Pseudococcus cryptus*

AUTHOR(S): Arai, Tomonori; Sugie, Hajime; Hiradate, Syuntaro; Kuwahara, Shigefumi; Itagaki, Noriaki; Nakahata, Takashi

CORPORATE SOURCE: Department of Citrus Research, National Institute of Fruit Tree Science, Kuchinotsu, Nagasaki, 859-2501, Japan

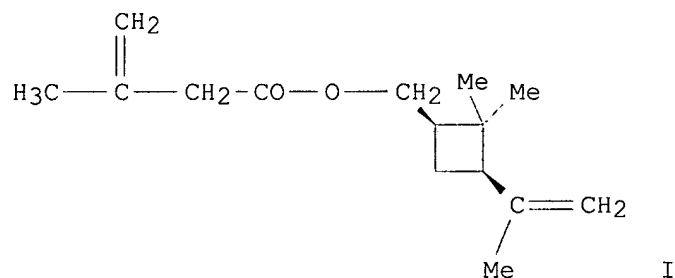
SOURCE: Journal of Chemical Ecology (2003), 29(10), 2213-2223
CODEN: JCECD8; ISSN: 0098-0331

PUBLISHER: Kluwer Academic/Plenum Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB A sex pheromone component of *P. cryptus* was isolated and identified. The crude pheromone extract obtained by airborne collection was fractionated by liquid chromatog. on Florisil, and further purified by HPLC and preparative gas chromatog. (GC). The pheromone component was shown to be an ester, the alc. part of which was identical to the known alc. moiety of the pheromone of *Planococcus citri*. The chemical structure was determined to be 3-isopropenyl-2,2-dimethylcyclobutylmethyl 3-methyl-3-buten-2-yl ester (I) by MS and ¹H NMR analyses. The absolute configuration of the pheromone was assigned as (1R,3R) by comparison of the retention time of the alc. derived from the *P. cryptus* pheromone with those of the alc. derived from *P. citri* pheromone, and a synthetic sample of alc. enriched in the (1R,3R)-enantiomer, using a chiral GC stationary phase. The structure of the pheromone was confirmed by synthesis and by bioassays in a glass

house.

IT 675605-81-9P

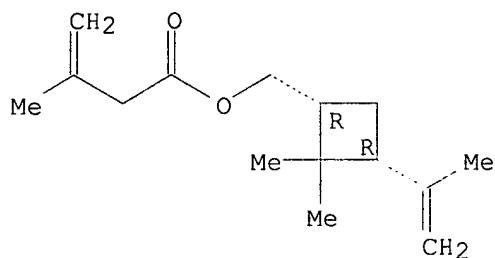
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)

(sex pheromone component of *Pseudococcus cryptus*)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT:

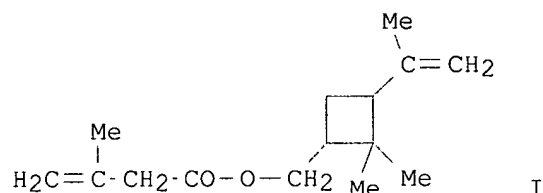
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THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

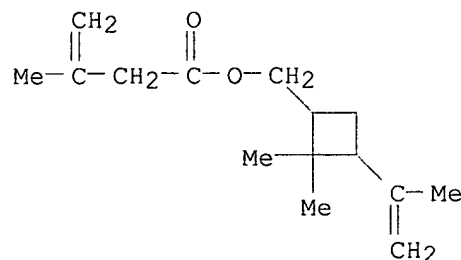
=> d ibib abs hitstr 120 1-3

L20 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:428887 HCAPLUS
 DOCUMENT NUMBER: 140:401774
 TITLE: Novel ester compound as attractant of Pseudococcus cryptus
 INVENTOR(S): Arai, Tomonori
 PATENT ASSIGNEE(S): Incorporated Administrative Agency, National Agriculture and Bio-Oriented Research Organization, Japan
 SOURCE: PCT Int. Appl., 21 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004043896	A1	20040527	WO 2003-JP14303	20031111
W: IL, US				
JP 2004161654	A2	20040610	JP 2002-328482	20021112
PRIORITY APPLN. INFO.: GI			JP 2002-328482 A	20021112

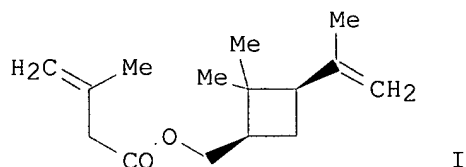


AB A novel ester compound is 3-isopropenyl-2,2-dimethylcyclobutylmethyl 3-methyl-3-butenate, and used as a sexual attractant. The compound is represented by the following formula (I).
 IT 690242-72-9
 RL: AGR (Agricultural use); BCP (Biochemical process); BIOL (Biological study); PROC (Process); USES (Uses)
 (as attractant of Pseudococcus cryptus)
 RN 690242-72-9 HCAPLUS
 CN 3-Butenoic acid, 3-methyl-, [2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN
 ACCESSION NUMBER: 2004:38941 HCAPLUS
 DOCUMENT NUMBER: 140:287191
 TITLE: Synthesis of the sex pheromone of the citrus mealybug, *Pseudococcus cryptus*
 AUTHOR(S): Nakahata, Takashi; Itagaki, Noriaki; **Arai, Tomonori**; Sugie, Hajime; Kuwahara, Shigefumi
 CORPORATE SOURCE: Laboratory of Applied Bioorganic Chemistry, Division of Life Science, Graduate School of Agricultural Science, Tohoku University, Sendai, 981-8555, Japan
 SOURCE: Bioscience, Biotechnology, and Biochemistry (2003), 67(12), 2627-2631
 CODEN: BBBIEJ; ISSN: 0916-8451
 PUBLISHER: Japan Society for Bioscience, Biotechnology, and Agrochemistry
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 140:287191
 GI



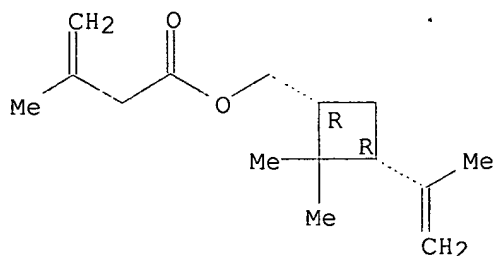
AB The sex pheromone of the citrus mealybug (*Pseudococcus cryptus*), [(1R,3R)-3-isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenate (I), was synthesized from (+)- α -pinene in five operational steps in a 43% overall yield. The synthetic pheromone was identical with the natural pheromone in 1H-NMR and mass spectroscopic properties, and showed almost the same pheromonal activity as the natural pheromone.

IT **675605-81-9P**, (1R,3R)-3-Isopropenyl-2,2-dimethylcyclobutyl]methyl 3-methyl-3-butenate
 RL: BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
 (asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, *Pseudococcus cryptus*)

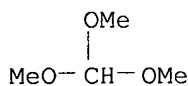
RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

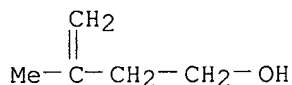
Absolute stereochemistry. Rotation (+).



IT 149-73-5, Trimethyl orthoformate 763-32-6,
 3-Methyl-3-buten-1-ol 7785-70-8, (+)- α -Pinene
 675605-83-1 675605-84-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (asym. synthesis of the cyclobutane ester sex pheromone of the citrus
 mealybug, *Pseudococcus cryptus*)
 RN 149-73-5 HCAPLUS
 CN Methane, trimethoxy- (9CI) (CA INDEX NAME)

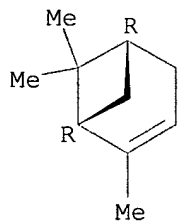


RN 763-32-6 HCAPLUS
 CN 3-Buten-1-ol, 3-methyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



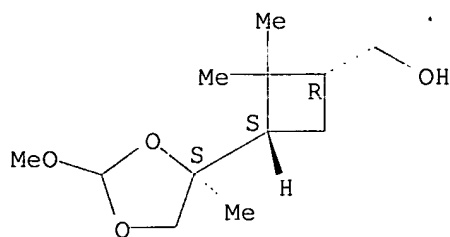
RN 7785-70-8 HCAPLUS
 CN Bicyclo[3.1.1]hept-2-ene, 2,6,6-trimethyl-, (1R,5R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



RN 675605-83-1 HCAPLUS
 CN Cyclobutanemethanol, 3-[(4S)-2-methoxy-4-methyl-1,3-dioxolan-4-yl]-2,2-dimethyl-, (1R,3S)- (9CI) (CA INDEX NAME)

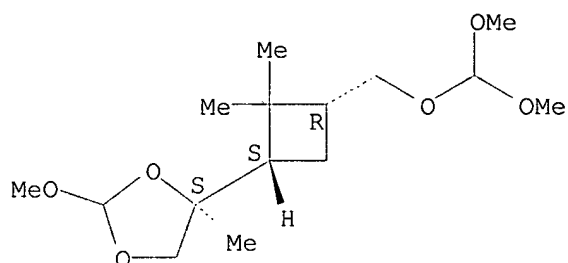
Absolute stereochemistry.



RN 675605-84-2 HCAPLUS

CN 1,3-Dioxolane, 4-[(1S,3R)-3-[(dimethoxymethoxy)methyl]-2,2-dimethylcyclobutyl]-2-methoxy-4-methyl-, (4S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 1617-31-8P, 3-Methyl-3-butenic acid 28465-09-0P

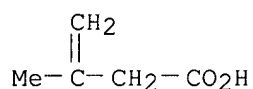
39863-91-7P 74036-20-7P 675605-82-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(asym. synthesis of the cyclobutane ester sex pheromone of the citrus mealybug, Pseudococcus cryptus)

RN 1617-31-8 HCAPLUS

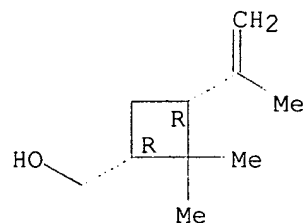
CN 3-Butenoic acid, 3-methyl- (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 28465-09-0 HCAPLUS

CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, (1R,3R)- (9CI) (CA INDEX NAME)

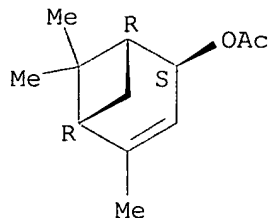
Absolute stereochemistry. Rotation (+).



RN 39863-91-7 HCAPLUS

CN Bicyclo[3.1.1]hept-3-en-2-ol, 4,6,6-trimethyl-, acetate, (1R,2S,5R)- (9CI)
(CA INDEX NAME)

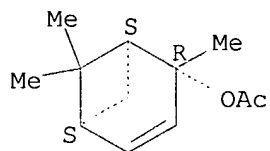
Absolute stereochemistry.



RN 74036-20-7 HCAPLUS

CN Bicyclo[3.1.1]hept-3-en-2-ol, 2,6,6-trimethyl-, acetate, (1S,2R,5S)- (9CI)
(CA INDEX NAME)

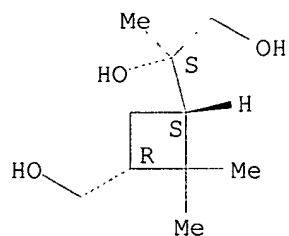
Absolute stereochemistry.



RN 675605-82-0 HCAPLUS

CN 1,3-Cyclobutanedimethanol, α -(hydroxymethyl)- α ,2,2-trimethyl-,
(α S,1S,3R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



IT 28465-10-3P 108788-33-6P

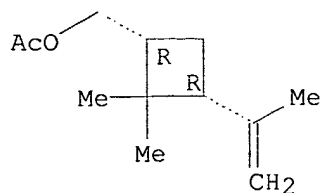
RL: SPN (Synthetic preparation); PREP (Preparation)

(asym. synthesis of the cyclobutane ester sex pheromone of the citrus
mealybug, *Pseudococcus cryptus*)

RN 28465-10-3 HCAPLUS

CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, acetate, (1R,3R)-
(9CI) (CA INDEX NAME)

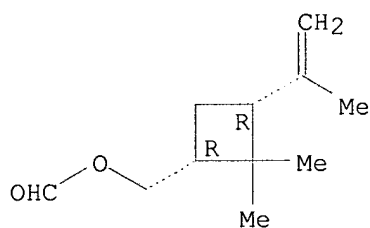
Absolute stereochemistry. Rotation (+).



RN 108788-33-6 HCAPLUS

CN Cyclobutanemethanol, 2,2-dimethyl-3-(1-methylethenyl)-, formate, (1R,3R)-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:833082 HCAPLUS

DOCUMENT NUMBER: 141:36321

TITLE: Identification of a sex pheromone component of
Pseudococcus cryptus

AUTHOR(S): **Arai, Tomonori**; Sugie, Hajime; Hiradate,
Syuntaro; Kuwahara, Shigefumi; Itagaki, Noriaki;
Nakahata, Takashi

CORPORATE SOURCE: Department of Citrus Research, National Institute of
Fruit Tree Science, Kuchinotsu, Nagasaki, 859-2501,
Japan

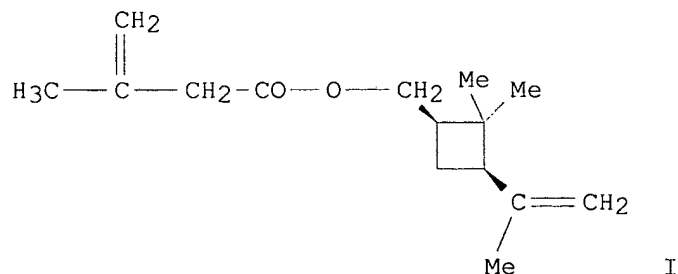
SOURCE: Journal of Chemical Ecology (2003), 29(10), 2213-2223
CODEN: JCECD8; ISSN: 0098-0331

PUBLISHER: Kluwer Academic/Plenum Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB A sex pheromone component of *P. cryptus* was isolated and identified. The crude pheromone extract obtained by airborne collection was fractionated by liquid chromatog. on Florisil, and further purified by HPLC and preparative gas chromatog. (GC). The pheromone component was shown to be an ester, the alc. part of which was identical to the known alc. moiety of the pheromone of *Planococcus citri*. The chemical structure was determined to be 3-**isopropenyl**-2,2-dimethylcyclobutylmethyl 3-methyl-3-butenate (I) by MS and ¹H NMR analyses. The absolute configuration of the pheromone was assigned as (1R,3R) by comparison of the retention time of the alc. derived from the *P. cryptus* pheromone with those of the alc. derived from *P. citri* pheromone, and a synthetic sample of alc. enriched in the (1R,3R)-enantiomer, using a chiral GC stationary phase. The structure of the pheromone was confirmed by synthesis and by bioassays in a glass house.

IT **675605-81-9P**

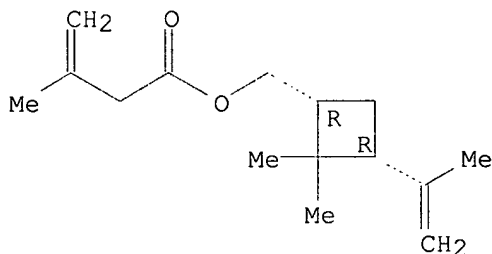
RL: BSU (Biological study, unclassified); NPO (Natural product occurrence); PRP (Properties); PUR (Purification or recovery); SPN (Synthetic preparation); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation)

(sex pheromone component of *Pseudococcus cryptus*)

RN 675605-81-9 HCAPLUS

CN 3-Butenoic acid, 3-methyl-, [(1R,3R)-2,2-dimethyl-3-(1-methylethenyl)cyclobutyl]methyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



REFERENCE COUNT:

20

THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT